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THE ROLE OF THE PUBLIC SECTOR IN THE SYSTEM OF INNOVATION: THE CASES OF THE AUTONOMOUS COMMUNITY OF THE BASQUE COUNTRY AND NAVARRA

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ABSTRACT

The main aim of this paper is to analyse the changes experienced in the role of the public sector in the economy, especially in the last decades, in the cases of the Autonomous Community of the Basque Country and of the Foral Community of Navarra.As the subject is too broad, we will concentrate on the study of the paper of the public regional administrations in the innovation strategy of the mentioned regions, especially related to research and development of new activities, as well as to the introduction of new technologies in the productive processes of the industry and service sectors.

1.- Introduction

The role of the Public Sector in the economic development of a territory has been very much discussed in the literature since economics has been considered a science. And in each period of time depending on the preferences of the authors and their point of view about the political and economic system the choice between the intervention of the State and the market have generally been considered as opposed forces. The main defenders of the market as the best mechanism to assign the resources only accepted the State intervention when market failures took place, but after World War II the general opinion changed. Keynes and his theory assessed that if capitalism wanted to go on it required the intervention of the State in the economy as long as the recession of his time was to be overcome. This seemed to work well until the seventies when the crisis appeared, unemployment grew and the governments had big deficits. These circumstances were used by the promoters of the market to fight against the defenders of the State.

In this sense, the neoliberal way of thinking doesn't consider the links between the societies and its economies with the State. Therefore, the latest won't intervene in the formation of that social capital or in the conditions to adapt it to the market. However, other schools do not accept this fragmentation of social institutions. For example, according to the American institutionalist school of thought, the main institutions that organise social life (market, State,.) do not have complete autonomy among them, but they interact together (Dugger 1992).

In the case of innovation, conventional economic theory relates it to the firm as this one has been considered the main innovative agent of the economy, and its development was supposed to follow a relatively precise period of time. From this point of view, innovation is seen as a new production process or a new product that can be perfectly evaluated, patented or commercialised.

However, according to the evolutionist school, point of view that we share, innovation is seen as the result of a socio-economic-technological process in which different agents take part in a complex network of dialectical relations. Technology changes and innovations are, therefore, processes that require time and a suitable environment to get them diffused and socially accepted. Within those processes changes in legislation,

education, and in other regulations are usually demanded together with changes in the procedures as well as in the attitudes in the work spheres and in the enterprises management (Freeman 1992).

Thus, innovation as a process is developed in a diffused and complex way. And in fact, the networks between science and industry require some interface organisations, which require legislation that allow them a bigger flexibility to adapt to the new context, and some funds to favour the working of those organisations. In this sense, it is necessary the proactive attitude of the public sector to encourage the interfaces between science and technology, as in this way the former can get on better and the later can obtain aid to use the scientific applications in a more proper way.

Therefore, the neoliberal dispositions to deregulate as much as possible may be counterproductive for a more systemic working (interaction among the science, technology and production subsystems). In some cases, the lack of an associative culture and the aversion to business risks may demand the participation of public organisations in the creation of co-operative organisations, scientific parks, seed enterprises, excellence centres, interface organisations, and so on. In practice, most of the links among the mentioned subsystems have a proximity character in space, as it seems clear that the nearer the public administrations and the scientific, training, finance organisations and firms are, the more efficient will be the performance of the public administrations related to them.

On the one hand, the most important innovations and radical changes have some global characteristics, but on the other hand, the “innovation frameworks or environments” are developed within national or regional systems.

In this paper, our main attention is centred on the role of the public sector on innovation policies, not at State level, but at regional level. We will study the cases of the Autonomous Community of the Basque Country and the Foral Community of Navarra. Both regions are part of the Historical Basque Country, and have had a common and long history and identity. Thus, they constitute two "cultural regions" following the definition given by Cooke, G-Uranga and Etxebarria 1997[i], as they merge with the

classical definition of "nation" as "people sharing a common culture, language and territory, but which have not become states", and both of them "have evolved distinctive governance structures within a state".

In the last decades the level of public intervention has been very high in these regions, as they have reached a high level of autonomy in several fields (although limited in some important fields and basic legislation). It seems, that in the case of the European Union, and according to Amin (1999), “it has become increasingly common to assume that region-building has to be about mobilising independent political power and capacity”.

2.- The main characteristics of the Innovation Systems

Our departure point is the definition given by Lundvall (1992) about the System of Innovation, as he defines it through the existence of a number of elements and relations that interact in the production, diffusion and development of new knowledge, which is economically useful. Thus, an innovation system is a social system where the new knowledge and the new techniques are produced and are the result of a social interaction with their environment.

According to the institutionalist school, the links between the cultural and institutional fields as well as the relations of those with the governments and law organisations are very relevant. We also believe that these links are more effective when those organisations are embedded in the society they work in and therefore their territorial projection is linked to society. Moreover, we find very interesting the systemic representation of the interinstitutional relations, system in which the actors interact, influencing the institutional and cultural environment in which they are embedded. In this sense, the more values are shared within the system among the agents the more efficient the system will be (Gómez Uranga 1998).

Thus, the main characteristic of a system is not that much the existence of a group of agents, but the capability to reach certain sort of associative relations, including some places in which the agents keep contact among them (Clubs, forums, workshops, consortium, “partenariats”, and so on) (Hirst 1994; Casson 1995). This means that the

working of a system is much more that an “entrepreneurial community”, as the neoliberal economists think.

Moreover, taking into account that "it is not possible to analyse the effects of technology change outside the particular framework in which they appear, due to the fact that the efficiency of the technology will have very different consequences in societies which differ in their institutions, values, resources and history" (Rosenberg 1979), we are going to apply to study to this particular region.

In the case of the Basque Country we will not analyse the system as a whole but the role of the public sectors in this field taking into account their main plans to encourage the relations among the different actors in order to improve the technological level of the system. For that we will start by describing the main political powers of these communities, its main economic indicators and finally its main policies.

3.- The main political powers of the Basque Country

The Autonomous Community of the Basque Country (thereafter, ACBC) is considered with the Foral Community of Navarra (FCN) to have the highest autonomy level within the current Spanish State of the Autonomies. This division of power between the central and autonomous governments was established within the political reform that took place in the second part of the seventies when a new constitution was written down and applied for the territory. In it, it was established that a process of administrative decentralisation was going to be carried out, where the different regions would have, in different degrees, several political and economic powers, (the Statutes of Autonomy were approved in the following years). In that framework, the Basque Country, although it was divided in two communities (ACBC and FCN), was one of the territories, which achieved more powers because of its history and culture (it had had a big autonomy until the middle of the XIX century).

In this process its singular tax system was accepted and therefore it has almost exclusiveness in most of the taxes gathering and management (although not in basic regulation). This has implied that the political administrative bodies of the Basque Country have had the capacity to take decisions and administer a large part of its

earnings from taxation and public expenses, what allows for more efficient management of these resources (Gómez-Uranga and Etxebarria 2000).

And also in some important economic fields powers were transferred to the region, such as Trade and industry, Education, culture, Healthcare, infrastructures, (although not all of them), Police (shared with the Spanish police forces), and so on, which have contributed to its high level of normative and managerial autonomy. In summary, the region was endowed with a certain capacity to implement regional policies, as the degree of competence achieved in the fields of industry, regional and technological policy is relevant.

In the case of the ACBC, the context in which the first technology policy was applied was a consequence of the path the industrialisation process had followed since it started in the second part of the XIX century, around Bilbao, concentrated around iron and steel industries, shipyards, shipping firms, electrical, chemical and paper industries. The financial sector became also very strong in the Spanish context. This specialization structure was maintained until the middle 70s.

When the international crisis hit the region, the impact was very strong, jobs in industry were lost on a constant bases during the first half of the 80s, and industry dropped from 54,6% of GDP to 46,3%. Within this context the Basque Government started implementing its industrial policy.

In the case of Navarra, industrialisation started much later, in the 1960s, pushed forward by certain local and some Catalonian entrepreneurs. They created several industries in the sectors of metal products, machinery, automobile, white goods, etc. Until then, agriculture had been the main activity employing about 50% of the active population, and taking part in the Gross Added Value in 28% of the total in 1964, while in the western part of the Basque Country (nowadays ACBC) was 8%. Industrialisation, thus, started late, but it grew rather strongly in the following decades and it reached the 42% of the total GAV in 1997 (BBV 1999)

4.- Main indicators of the current economic structure of the ACBC and of the FCN

Table 1: Evolution of the economic structure of the ACBC and FCN (% of total GAV)

Year	ACBC			FCN			Spanish State		
	Agricult	Industry	Service	Agricult	Industry	Service	Agricult	Industry	Service
1955	9,2	56,8	34,0	30.5	37.5	32.0	20.5	38.0	41.5
1964	7,8	55,7	36,5	28.4	35.4	36.2	17.9	39.2	42.9
1975	4,0	55,2	40.8	14.1	43.8	42.1	9.7	39.1	51.2
1985	2,3	47,8	49.9	7.3	40.8	51.9	6.4	32.0	61.6
1997	1,9	40,8	57.3	4.8	42.2	53.0	5.3	29.3	65.4

Source: own elaboration from Fundación BBV.

From this evolution we can see that the weight of industry in the Basque Country is bigger than in Spain, especially in the FCN, and that agriculture has suffered a big decrease in all of them, as it is usual in the industrialised regions. Nevertheless, in the FCN has been especially significant due to the level they had in 1955 (30.5% of the GAV came from that sector and nowadays is around 4%).

In the case of the FCN, its inhabitants account for 1.3% of the total Spanish population. Its production is mainly concentrated in four sectors: metallic products and machine tools (26% of the total production within the FCN), followed by food, beverages and tobacco (20% of the GAV). Other important sectors are the transport sector (12% of Navarra´s GAV) and paper and printing with the 9,7% of it, (last data from the BBV, 1993).

The evolution of the unemployment rate in ACBC the last two decades has been falling after having reached too high levels at the beginning og the 90s, but it is still very high, 15% of the active population. In the case of the FCN its unemployment rate is lower (around 10% in the last years), that is the lowest in Spain, although its rate has not fallen down very much in the last growing years.

Related to the size of the enterprises, most of them are very small. According to data from 1998, more than 90% of the total enterprises in the Basque Country had less than 50 employees, and only 4% more than 100 (INE 1998). Anyway, as they are small economies they are very open, and then the levels of exports are very high. For example,

in 1997, it was 33,5% of the GAV in the ACBC and 45,5% in Navarra (Caja Laboral 1997). Also, the destiny of these exports is mainly the European Union, and especially France, Germany and Italy.

Related to Foreign Direct Investment the situation along the last decade has been very different in both territories, as Navarra has attracted a big amount of resources, especially in the middle of the decade, after Volkswagen bought Seat enterprise, and nowadays more than 100 foreign enterprises are located in the region, many of them bought to local entrepreneurs in the 80s and early 90s.

In Research and Development (R&D), although the Basque Country as a whole was underdeveloped at the end of the 70s, as most of their enterprises did not carried out any activity in this field. The situation has progressively changed especially in the ACBC, and lately also in the FCN although at a very slow pace. As a result and taking into account the few indicators we have, the evolution in the last years is as followed:

Table 2: R&D expenditure respect GDP (%)

	1987	88	89	90	91	92	93	94	95	96	97	98
ACBC	0,81	0,94	1,00	1,13	1,16	1,17	1,15	1,04	1,17	1,23	1,23	1,2
FCN	0,51	0,35	0,45	0,88	0,93	0,98	0,92	0,74	0,81	0,83		
SPAIN	0,64	0,72	0,75	0,85	0,87	0,91	0,91	0,85	0,85	0,87	0,82	0,90
EU				2,00	1,96	1,92	1,97	1,90	1,84	1,82	1,80	

Source: INE, SPRI

The evolution of the R&D expenditure in FCN shows a big increase at the end of the 80 followed by stagnation and a slight decrease along the nineties. In the case of the ACBC expenditure increased the first years of the 80s and afterwards there were small increases until now although the rate is bigger than in the Spanish average, but much lower than in the EU.

The way the expenditure in R&D and the personnel working in R&D in full dedication is carried out by the different agents shows big differences among the different territories. In the FCN is relevant the weight University has in R&D activities, due especially to the role the private university plays in this field as later on will be summarised. In the Spanish

case also the relevance of Higher institutions is big, due especially to the low weight of enterprises in this area. In the case of the ACBC, however the main role is played by enterprises, but we must take into account that Technology Centres although financed in a big part by the Government are considered enterprises and then are included in that group.

Table 3: Expenditure in R&D activities and personnel in R&D in full dedication regarding the main actors of innovation in 1998

	FCN (1996)		ACBC (1998)		SPAIN (1998)	
	R&D expe.	Personnel	R&D expe.	Personnel	R&D expe.	Personnel
Pub. Admin.	4.0	4,5	2,9	26,4	16.2	20.7
High. Educ	40.0	60.5	25.2	4.0	30.5	42.2
Firm	56.0	35	72.0	69.4	52.1	35.7
Total	100	100	100	100	100	100

Source: INE, SPRI, Government of FCN.

Note: the percentage does not sum 100% because the Non profit institutions are not covered.

5.- The main policies related to innovation applied by the Basque Government

In the context of crisis and lack of local investors in which the Basque public authorities started to work, the first move they did was to set up a Regional Development Agency called Society for industrial promotion and restructuring (SPRI) in 1981. This organisation was directly dependent on the Basque Government, and its priority mission was the defence of existing jobs and the creation of new ones. Thus, the main purposes of the Company from the beginning were, among others, to stimulate joint action and co-operation between firms, support efforts made by the parties involved in the process of restructuring and reorganising companies, in case of being viable and stimulate research and development project por new industrial processes, products and associated services.

To achieve these objectives, SPRI was mainly empowered to award subsidies and loans, at special rates of interest if appropriate and take shares in the equity capital of companies of particular interest[ii], and also to issue bonds or similar securities.

The main actions carried out by the government through the SPRI on Industrial Policy concentrated, in the first years, on giving aid (basically subsidies and loans) to SMEs (the

restructuring of the big enterprises was carried out by the central government) which were experiencing great difficulties and were in danger of shutting down. These aids were given in an isolated way without following criteria by sectors, until the beginning of the 90s.

As long as the technology policy is concerned we can distinguished two phases: the 80s and the 90s. During the 80s, the first aim was to promote the adoption of technology by the Basque industry. To attain that aim two priorities were established. The first was drawn to create a structure of technology centres sponsored by the Government, and the second to support the R+D department of the enterprises.

A model of private technology transfer was chosen but with a high level of public funding, designed as a technical support to answer the R+D needs of the enterprises, specially SMEs, in this case also by means of the SPRI, which gave diffusion and technology transfers support.

The technology centres[iii] were set up on the base of small testing and service laboratories, which existed around industrial centres and training schools, and after a time they have become one of the main specific elements of the R+D system of the Autonomy. But they have never had any institutionalised relation with the university, since the moment they were established they cut their relation with the university (Regis 1998).

The Industry Department financed an important part of the research activity of the Centres through “generic projects”, assigned to gather and assimilate knowledge and technical skills in strategic fields in order to be able to transfer them afterwards to the industrial tissue of the country (SPRI 2000).

The second main element of this first technology policy was to support the R+D of the enterprises, in the first place directed towards the Department of R+D of the enterprises, and later on by means of promoting aid programs to R+D projects carried out by the enterprises. It was the beginning of the policy and without being selective its aim was to

sensitise the enterprises about the need of the R+D activities by giving them a small amount of subsidies, that has been called seed or spread policy.

Once the measures started to be applied it was observed the need to control them and of also specific planning policies. Therefore, the Technologic Strategy Unit was created in 1989 inside the SPRI, and its main function was to carry out the elaboration of proposals of technological strategies and selection of projects. Its first work was to make the Plan of Technological Strategy (PET-1990), which defined the main technological areas and projects[iv] that were to be accomplished, after carrying out several interviews with the parties concerned, as CTT, enterprises, University departments, etc. At the same time, the public funding of the Technology Centres for generic projects was reduced in order to push them to collaborate in individual and strategic projects with the enterprises.

Therefore, there was a change with the policies carried out the previous years that intended the diffusion and assimilation of existing technologies, to a policy based on planning, selecting the most technological interesting areas for the productive system and giving priority to generation of new technology (Regis 98).

Once Porter and the Monitor Companycarried out the study about what they considered the main sectors with future prospects, (the competitive advantage of the Basque Country), in 1991, the First Global Industrial Policy Plan was drawn up, directed to orientate the R+D infrastructure towards the firm's demand, and on the other hand, to articulate this demand through the clusters[v]. Therefore, the weight of the clusters in the selection process of projects and partnerships was increased.

The Industrial Technology Plan de 93/96 took into account four kind of projects dependant on the main actors who were going to carry them out. The Basque Government's funding implication in them was different, reaching a very high percentage in the generic projects, carried out by technology centres (100% of the in the last years), and much lower in the individual projects, carried out by enterprises (more or less 10% depending on the year),as by these aids it just tried to encourage enterprises to carry out research while the generic projects were mainly developed by the technology centres and the public university, much dependent on public resources.

In this plan the first effort was made to include university as a technology offer organisation. This means that the scientific policy, developed since 1981 by the Education Department, whose main aim was to support basic research carried out at University had been designed completely apart from the technology Policy (Department of Industry).

This may sound strange as the University of the Basque Country (UPV), a public funded institution that was established in 1968 as University of Bilbao to provide the region with an Institution of Public Higher Education[vi], nowadays is considered the most important one of the Community. It provides degrees in Humanities, Science and Technology and is distributed among the three territories. On the other hand, there are two private institutions, the University of Deusto that is mainly located in Bilbao and imparts above all social sciences, and the University of Navarra that has a Superior Engineering School in San Sebastian. All of them have been rather apart from technology policies until 1993, then.

It will be with the next plan, the Science and Technology Plan 1997-2000, when an important step was given in order to incorporate the University in the R+D system and towards the co-ordination of the science and technology policies of the Basque Government. With it, the Basque Technology Network was set up, with the aim of incorporating all the agents to the R+D infrastructure and to co-ordinate their participation. For each of the agents a different level of public funding was established.The plan has also maintained as a priority to strength the R+D infrastructure, to orientate their activities towards the technology demand and give priority to interfirm co-operation.

The public resources of the plan reached the 57% of the total resources, and the Basque Government would provide the 41% of the total (245.4 millions of Euros), covering the private sector the rest. If compared with the previous plan we see that the implication of the public sector grew in resources, but also the hope that the private sector would become more implicated in it.

In summary, the main aim of the Plan was to give to the R+D infrastructure a systemic character, by trying to promote the activity of the agents as elements of a system, in a way that their operations were consolidated in a network, especially linking the demand side (mainly firms) with the offer side (mainly technology centres and Universities). And also in this plan for the first time the department of Industry and Education work together to design it and to assign University an active role in the technology offer of the system. Another important objective of this plan is to consolidate the technology demand based and originated on the market needs, that is enterprises are considered the main element of the system and therefore their needs are the main demand to be covered.

In this sense, a new vision where the interaction among the agents is non-linear as all of them have to be interrelated with the rest of the elements of the system is promoted.

5.- The main weaknesses of these policies

Although it is obvious the improvements in the aims of the policies carried out within the different plans, still several problems remain in the working of the organisations an in the relationship among the actors of the system. Just to mention some of them we can underline the following ones:

- The technology centres are obliged to get more and more funds from the enterprises, so other research projects no so much related with the market are likely to be postponed.
- The public administration and many small enterprises who do not carry out research activities do not collaborate.
- The main aim is to answer to the needs of the enterprises in the sort run, so basic research sometimes is not given the importance it has.
- University is seen many times, just as the more technical departments (engineering, physics, chemistry, medicine,) and the social branches are usually forgotten.
- When companies are mention the public administration is talking about the managers and technical staff of them, not about the workers (usually).
- The relations among employers and workers trade unions are not often very fluid.
- Nowadays, the role of the university as a “supplier” to industry is overlapped by the Basque Technology Centres, specially by the ones Under the Protection of the Basque Government, and by Sectorial R&D Centres, but they do not collaborate very often.

6.- The main policies related to innovation applied by the Government of the FCN

While Bizkaia and Gipuzkoa were considered traitors by the Franco regime and as a a punishment their capability to have their own Treasury was abolished, Araba (nowadays the third part of the ACBC) and Navarra maintained these competencies to establish and manage their own taxes. Due to this fact, the Public sector in the FCN had the chance to carry out its own tax regulation, and it was used since the beginning of the industrialisation process in the 60s.

In that sense, all its actuation along these years was focused on the promotion of private investment, creation of firms, localisation of new productive units, etc. But, it will not be until 1982, when it elaborates its first performances related to research and development. In this way, when the Statute of the Autonomies was passed the Foral Parliament started to approve several measures in that field for the promotion of those activities. Nowadays those rules are still operative, being renewed every year. In this regulation we find the following performances: training for researchers, support for equipment infrastructure and instruments for research, assistance for R&D projects, aids for pilot plants and finally, support for selling technology to the exterior.

In the middle of the 80s, the Government set up a Regional Development Agency called SODENA. Its main goal is the promotion of the FCN´s economic development, and as such, supports new initiatives in various fields.

Also during the 80s the Government created the most important technology centres of Navarra. One multisectoral, called CETENASA (Technology Centres of Navarra, SA) and the rest sectoral ones related with agriculture and stockbreeding.

CETENASA is the most important one, and is a public enterprise that belongs to the Government of Navarra, and promoted by the Department of Industry. It was created at the endo of the 80s, by setting together three different centres related to Laser, Testing and Metrology and Electronics and Automatics centres. It aims to contribute to the development of Navarra by supporting, promoting and getting nearer to the enterprises the use of technology. Apart from that, there are also four Technology Centres related to

the food and agriculture industries. Other two are related to construction and architecture.

On the other hand, until 1987 there was not a public university in the region. Once set up, the Public University of Navarra (UPN) it has nowadays approximately 12.000 students and 700 lecturers. Previously, only a private university, the University of Navarra (UN), existed, which had been founded in 1952. That University has been very implicated since its beginnings in research activities, providing the region with a very relevant academic and research tradition. In 1986, the Scientific and Technological Institute (ICT) was created as a non-lucrative entity, promoted by the UN to facilitate the contracts and the service provision to the enterprises. The UN's R&D services are commercialised by the ICT, which is an ILO recognised by the General Secretary of the State Plan, through three research centres.

The different departments within the UPNA worked in 1997 with 58 firms, and the ones in the UN for 129 enterprises (from which, 90 were from the construction department, mainly in analysis services

In this sense, a study carried out recently shows that one of the aspects to emphasise in Navarra's system is the weighty implantation of the UN. This relevance is basically due to the research in medical sciences that this private university performs through its medicine faculty, University Clinic, and overall, through the ICT, that becomes the main research executor in Navarra after the enterprises (Lavía, Olazarán and Urrutia 1995).

The entrepreneurs, on their side, set up an organisation called Industrial Association of Navarra (AIN, SA). It offers services related to industrial activity in the fields of viability studies and projects; economic, taxation, legal and financial assessment; personnel training and development; selection of personnel, engineering and technology.

At the beginning of the 90, the Foral Community's political administration felt the need for some intervention in the field of Research and the first "Research Regional Plan" of Navarra (PRINA) (1992-1995) was elaborated. Although it was not operative due to political reasons, it aimed to provide the region with a research culture that would bring

high level human capital; support the participation in R&D programs with external financing to the community of the centres, associations and R&D units located in the FCN, etc.

After this failed specific measure, it will not be until March 1999, when the government in the FCN approves a new plan for the region, which has been called the "Technology Plan of Navarra 2000-2003". With this plan, the government will try to facilitate the access to the new technologies for the SMEs, to support with financing the entrepreneurial innovation initiatives, to promote the technological centres and the innovation fields of the multinational enterprises located in Navarra.

The elaboration process of this plan has consisted on the working of several committees made up of the main actors who take part in the innovation process (enterprises, technology centres, universities, some trade unions, the government,..).

The technology plan of Navarra 2000-2003, has a budget of 19.937 millions of pesetas for the four years. This plan is based on a previous study of the FCN´s supply and demand situation and needs to know the necessities the community has. Its objective is to promote several lines that they will permit a competitive improvement of the regional enterprises and the increase of employment through the raise of the R&D expenditure from 0.9% to 1.6% of the GDP in the next four years. Also it will try to triplicate the business expenditure, from 5.600 to 15.300 millions of pesetas.

In the "Technological Plan of Navarra 2000-2003 there are several sectorial and thematic projects planed. The most important ones are the Automobile experimental centre in the FCN, the Information and Communication New Technologies, the Renewable Energy Technology Centre of Spain, the Applied Medicine Research Centre, (where the the main promoter is the University of Navarra (UN), the Innovation Park of Navarra, and the Creation of the Agrobio-technology and Natural Resources Institute to impulse the scientific development of the public university of Navarra (UPNA).

The co-ordination and management of the plan are carried out by the "Agencia Navarra de Innovación" created with that objective. Its main aims are to ensure the quality of the

management of the plan and to be the intermediate organisation among all the actors of the system. As it has recently started to work it is too early to make any valuation of its job.

7.- The main weaknesses of these policies related to the relationship among the actors of the system.

Anyway, nowadays some problems arise very clearly in the working of the System These, among others are:

The lack of fluid university-enterprise relationships due to the lack of trust firms show towards the university research, as many times there is a lack of confidentiality in their work. Also, the working rhythm in each of them are very different, interest conflicts arise and there is a lack of habit to co-operate with the productive sector. Moreover, the problems are also related with the fact that the incentives in the academic environment are via curriculum and not monetary, or the inefficiencies in the ILOs (Cotec 1997). The university is also very young and there is not a Scientific and Technological Plan to promote those relationships.

On the other hand, according to the opinion of the enterprises, the barriers they find to innovate are focused on the high level of expenditure innovation implies, (like in the ACBC), and the lack of financing at a proper cost. They also mention the lack of specialised personnel and the lack of time due to the dependence of a parent company and lack of autonomy because the condition of filial. These last two constraints are consequence of the strong presence of multinational enterprises located in the region (in contrast to the ACBC situation).

Within the productive sphere, there is also a lack of communication between the entrepreneurs organisations (and also the current government) and several trade unions due to political reasons, what makes more difficult the required collaboration among the social and economic actors for the proper working of the system.

7.- Some remarks about these innovation systems

First of all we want to mention that the central administration also takes part in the innovation policies carried out by the regional administrations, although they have not

been covered in this paper, as we have centred on the policies carried out by the regional governments. In the same sense, the European Union takes also part in these policies especially once the Single Act was passed in 1986, by means of the Structural Funds and the Framework Programs, and other specific programs. The participation of these organisations will be the object of following studies. But we have been interested especially in the main aims of the regional policies to know a bit better their main aims.

Thus, we see that the main objective of the technology policies in both regions have basically been the enterprises as they are considered the most important element of the system. Only after a time of experience they have realised that Universities and Basic research also play an important role in it. In the case of the ACBC the development of the Technology centres in the first place located university basically in the teaching sphere and very slowly it has been given the importance it has. In the case of the FCN the private university is much stronger than the public one.

Anyway, and although efforts are being made to open the technology programs to the different actors of the system still are obvious the big deficiencies related with the workers, their training and their participation in the decision processes of these policies as they are in fact not considered as vital actors, in spite of being one of the main elements of the system.

The current political situation of division in society, where there are different projects that can not be discussed in equal opportunity bases is another obstacle to reach consensus on these important subjects for the future of the Basque territory.

At the same time, the fact that after twenty years of administrative decentralisation some powers have not been transferred yet, such as some technology competencies, labour regulation and direct relations with the European Union in the subjects that directly affect these communities, is another handicap for the configuration of an atmosphere of trust and illusion, as well as the setting up of projects for the future on a more stable basis.

Therefore, although the elements are being developed and that is good news, still many steps have to be given to build the conditions that many authors see as essential to achieve an efficient innovation system as we summarise in the last point of the paper.

8.- The required conditions for the working of an innovation system

"Many of the prosperous regions of Europe are also regions of participatory politics, active citizenship, civic pride, and intense institutionalisation of collective interests of society brought back into the art of governance. Within them, associational life is active, politics is contested, public authorities and leaders are scrutinised, public space is considered to be shared and commonly owned, and a strong culture of autonomy and self-government seeps through local society" (Amin, A. 1999).

According to Gomez-Uranga, it is not possible to achieve the diffusion of knowledge along society, if solidarity values are not developed in order to allow the majority of the citizens to get a proper level of economic welfare (incomes, education, training, health,...). But the "objectives of economic and social justice require the development of new institutions of distribution coherent with elements such us stable employment, technology diffusion, participation of a plurality of agents and institutions that interchange and cooperate in the creation of innovative spaces which allow to diversify and widen the economic activities (Gómez-Uranga 1998).

In summary we agree with Amin when he states that "the policy challenge in this regard for Less Favoured Regions is to find a way of substituting their traditional ties of hierarchy and dependence (e.g. big firms, state provision, family connections) with links of mutuality between economic agents and institutions (Amin 1999) that we still lack. We hope that in the medium run we will be able to overcome the current handicaps to develop a Basque Innovation System based on economic democracy and justice.

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[i] The authors also refer to another kind of region, designated "administrative regions", of which the Austrian and German Länder are strong versions, along with Flanders and Wallonia from Belgium. Weaker variants would include most other regional administrations with some degree of policy making and political capacity that have come into existence as the result of state reforms to establish regional democracy as with Italy in the 1970s, France and Spain in the 1980s. Non- European federal systems as in North America and Australia belong here, too, with the exception of, for example, Quebec". (Cooke, Ph., Gómez-Uranga, M., Etxebarria, G., 1997: 479-480).

[ii] The condition was that the Basque Government had to authorise SPRI to do so, and in the conditions stated for each individual case.

[iii] The technology centres in some cases were born at university, as was case of CEIT that was created from the Engineering School of Navarra in San Sebastian, LABEIN that had its origin in the School of Engineering of Bilbao or TEKNIKER born in the Engineering School of Mondragon.

[iv] The technological areas selected were advanced materials, technologies of information, and technologies of fabrication.
And the selected sectors were auxiliary of the automobile, technologies of information and machine-tools.

[v] The industrial cluster promoted by Porter, M. And his team are Aeronautics, Automotive, Knowledge, White goods, Energy, Machine tools, Environment, Telecommunications

[vi] It changed its name to University of the Basque Country in 1977.

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